2005

OFDM 60 Degree Sector Antenna Switch

Center for Network Innovation and Experimentation

OFDM 60 Degree Sector Antenna Switch.

The OFDM 60 Degree Sector Antenna Switch designed and developed based on RedLine AN-50 802.16 radio set to support high speed data link for Tactical Network Topology (TNT) experimentation series at Monterey Bay. There are three AN-50 radios connected to three 60 degree sector antennas for a combined 180 degrees of coverage within the bay. Each of theses antennas transmit and receive on the same frequency, which could have resulted in significant interference. The OFDM Sector Antenna Switch software was developed to resolve this issue. It allows monitor each AN-50 link status and maintain connectivity when a signal is established within its 60 degrees of coverage.

Below is the set of pictures and snapshots to illustrate the OFDM Sector Antenna Switch in action during the TNT-2 experiment on March 1-3, 2005.

Fig 1. OFDM Sector Antenna Switch in the Beach Lab.

Fig 2. Three 60 degree sector antennas on the Beach Lab tower.

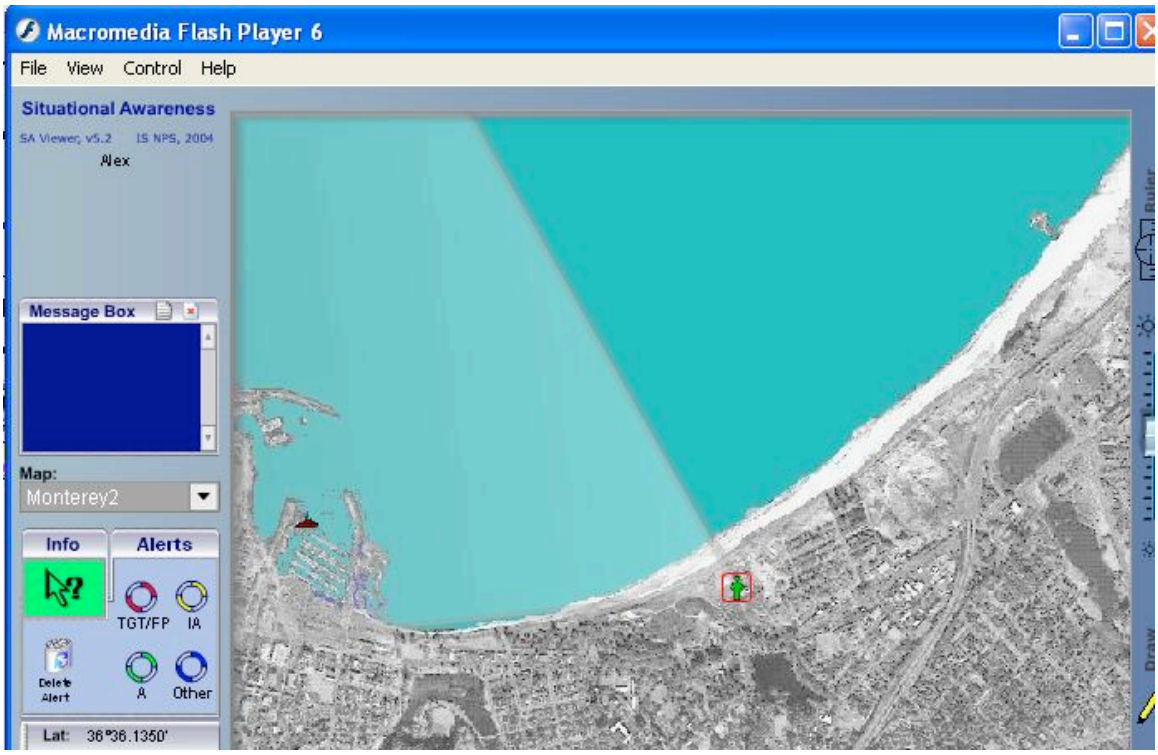

Fig 3. Communication with Cypress Sea boat over the sector antenna #1

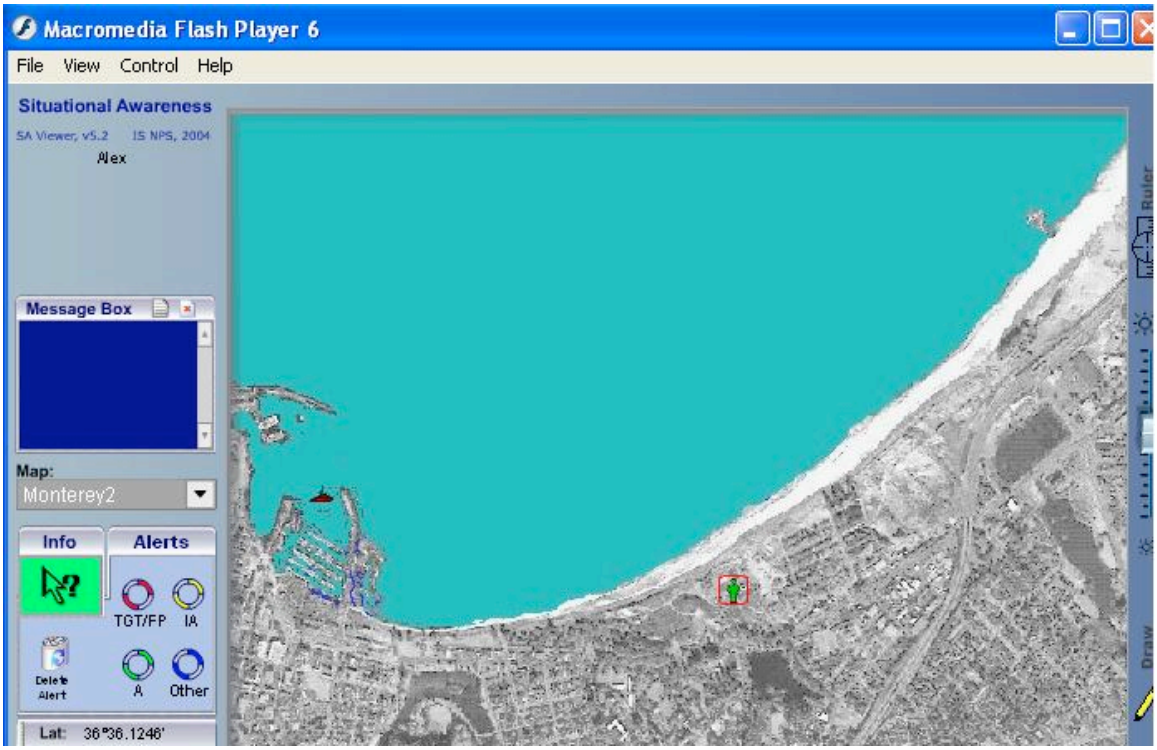

Fig 4. Communication lost because the Cypress Sea is shielded by a massive metal construction on the pier.

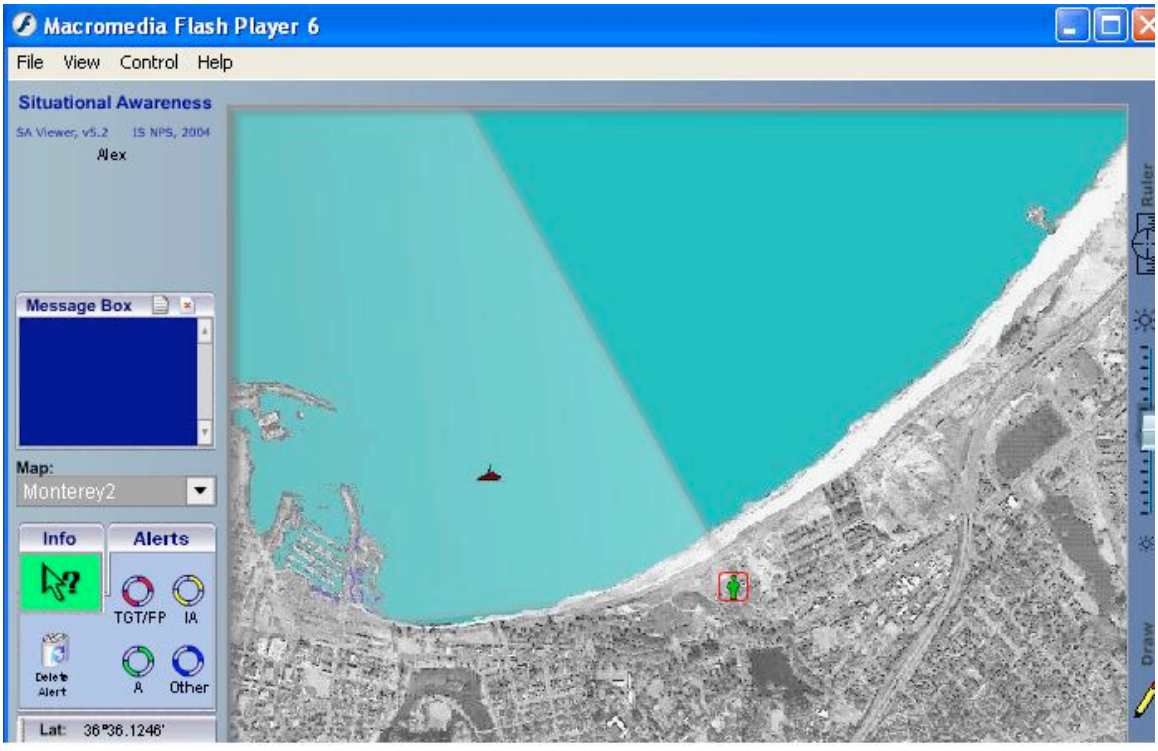

Fig 5. Communication with Cypress Sea boat restored over the sector antenna #1

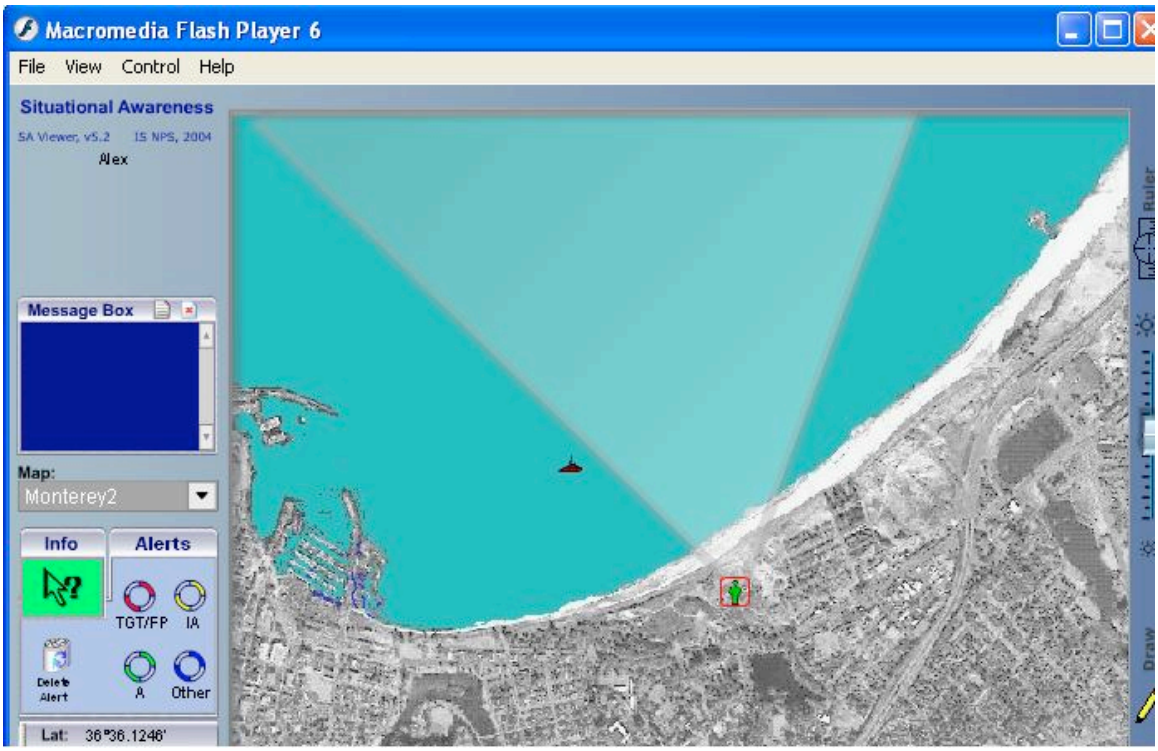

Fig 6. Communication with Cypress Sea boat established over the sector antenna #2

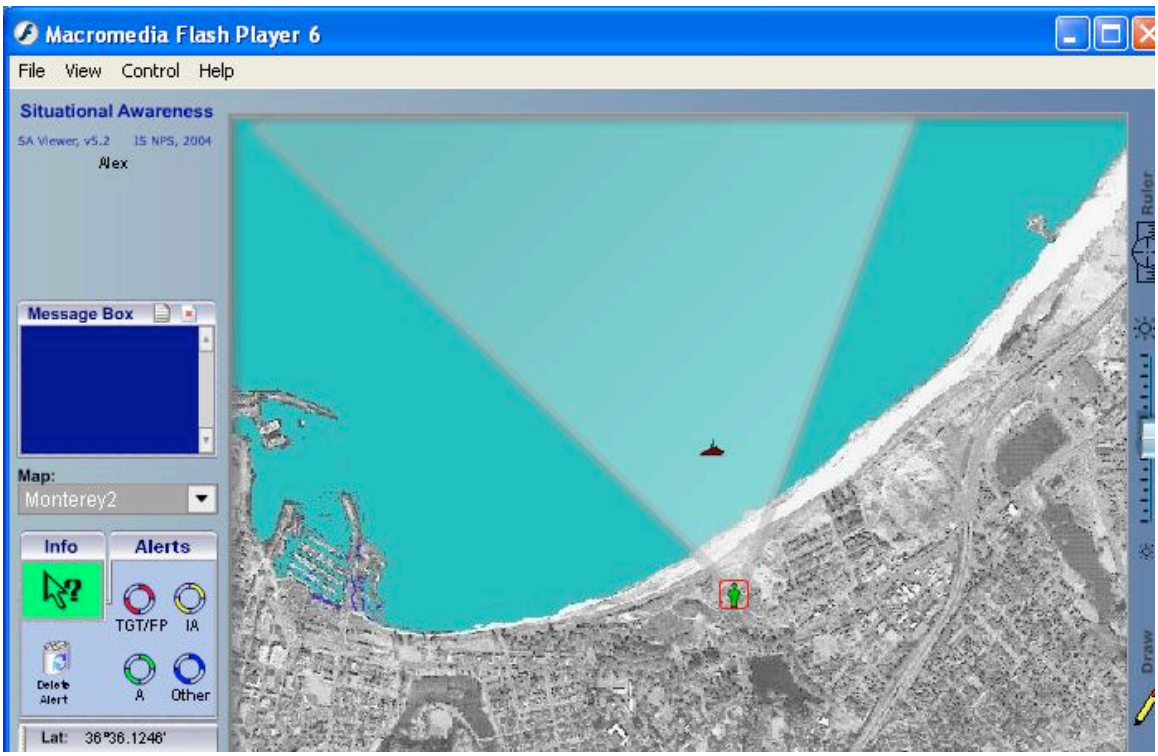

Fig 7. Communication with Cypress Sea boat over the sector antenna #2

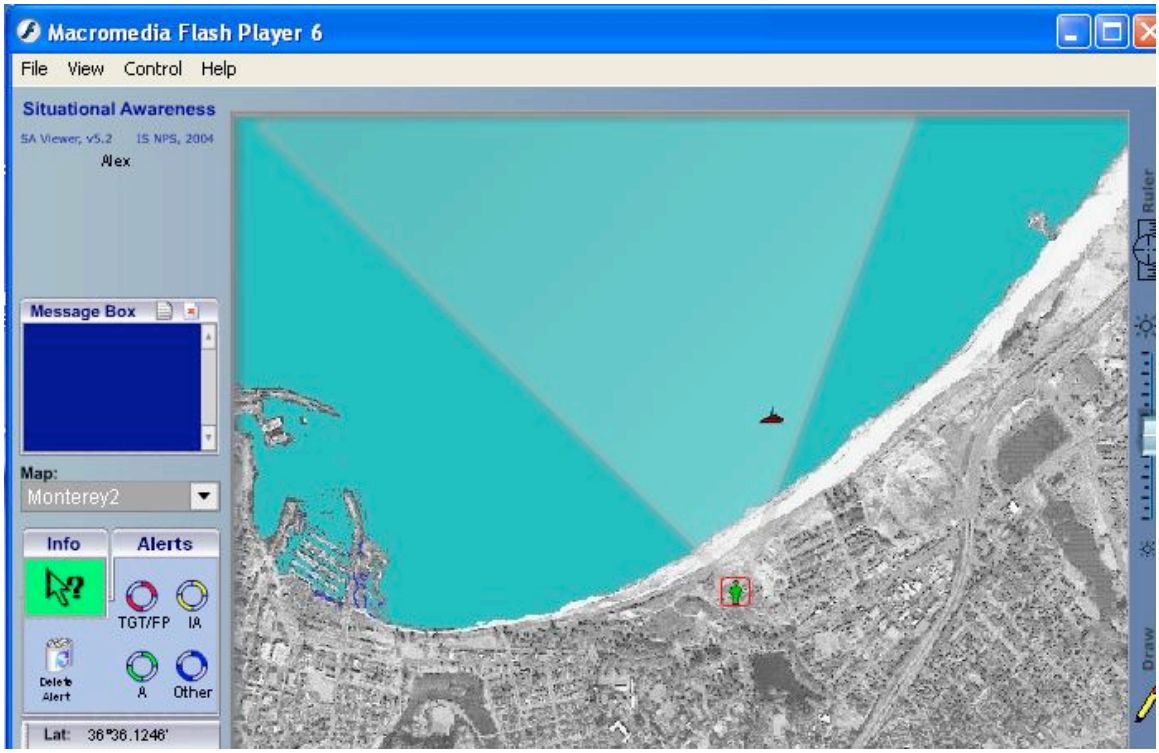

Fig 8. Communication with Cypress Sea boat over the sector antenna #2 (continue)

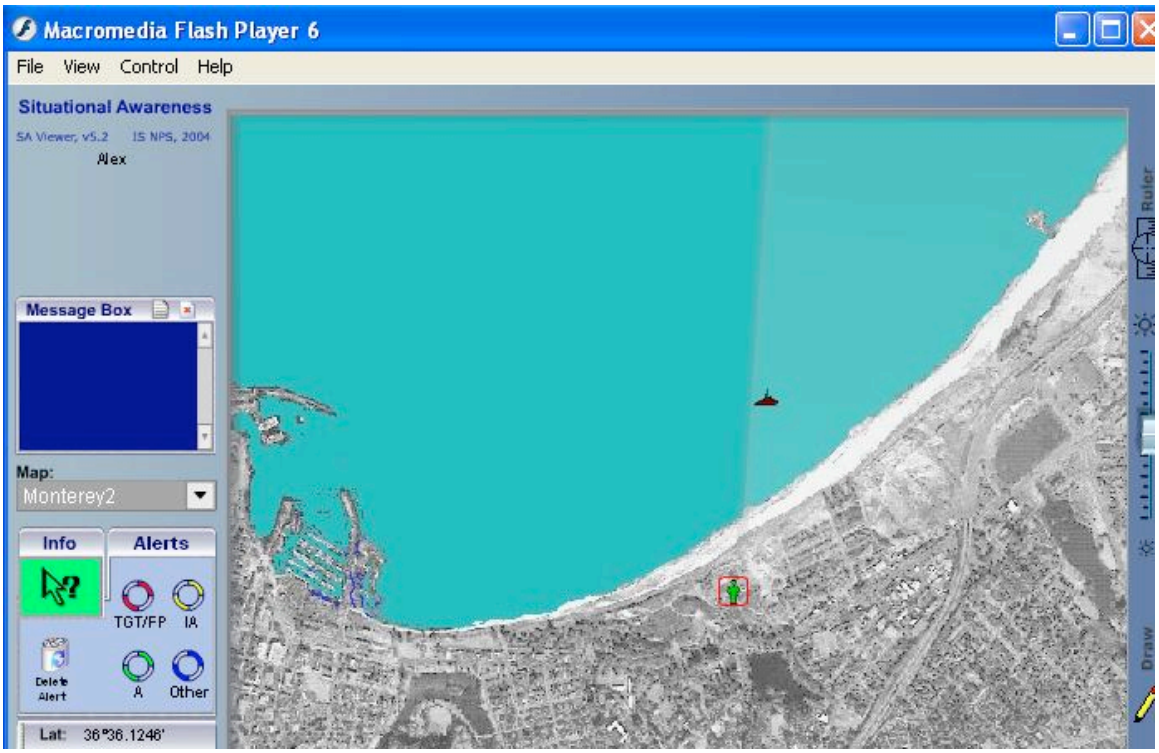

Fig 9. Communication with Cypress Sea boat established over the sector antenna #3

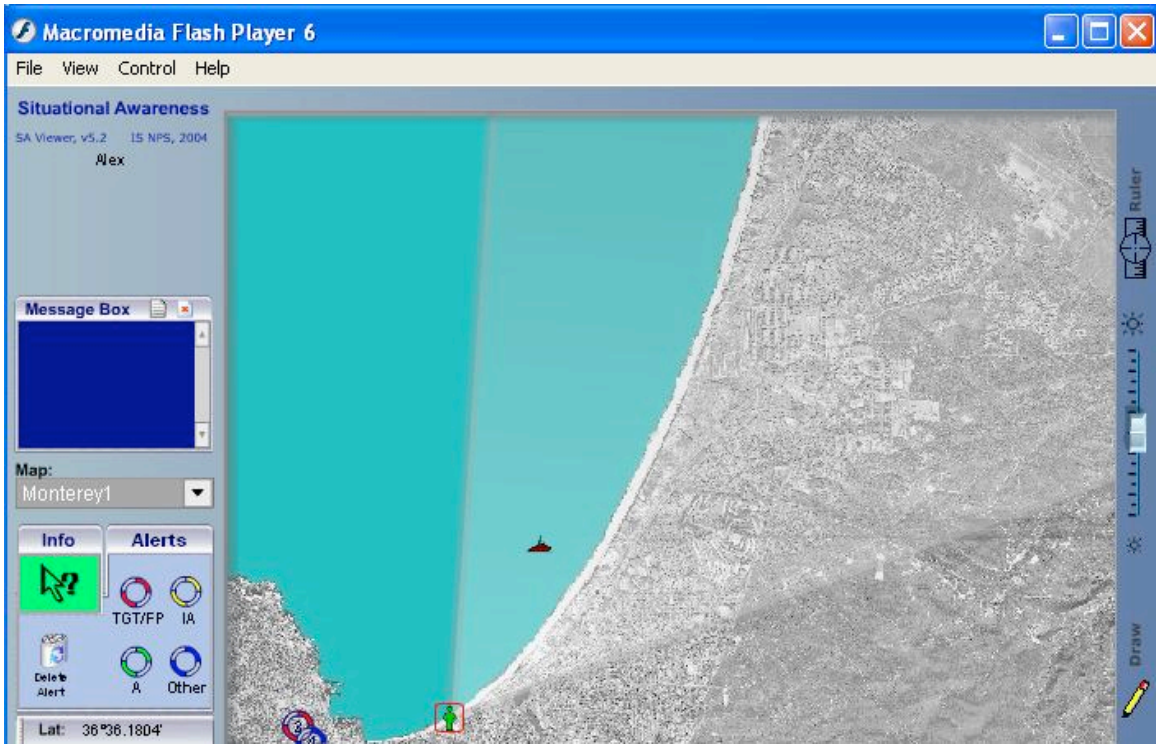

Fig 10. Communication with Cypress Sea boat over the sector antenna #3